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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No.: 08/950,826

Filing Date: October 15, 1997 Appeal No. _____

Applicant: Yukio Uemura et al.

Group Art Unit: 3743

Examiner: J. Ford

Title: Air Conditioning Apparatus

Attorney Docket: 4041J-000063CPA

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**APPEAL BRIEF**

**CERTIFICATE OF MAILING**

*I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231 on* December 15, 2003.

By _____.
Michael J. Schmidt

Director of the United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This is an appeal from the September 30, 2003, Final Rejection of Claims 1, 3, 5-8, 10 and 19-24 in the above referenced patent application. None of the claims have been allowed. Claims 9 and 11-18 were cancelled in a Response mailed October 25, 2000. Claim 2 is currently withdrawn from consideration.

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Claims 1, 3-8, 10 and 19-24 are rejected under 35 USC §102(f) because the Applicant did not invent the claimed subject matter. Claims 1, 3, 5-8, 10, 19, 20 and 21-24 are rejected under 35 USC § 103(a) as being unpatentable over Iritani, et al. (U.S. Pat. No. 5,526,650) in view of JP 6-40249. Claims 3 and 22 are rejected under 35 USC 103(a) as being unpatentable over the prior art as applied to Claim 1 and 10 above, and further in view of JP 6-270645 or JP 7-69045. Claims 6, 19, 23 and 24 are rejected under 35 USC §103(a) as being unpatentable over the prior art as applied to Claims 1 and 10 above, and further in view of JP 5-124426. The claims on appeal are Claims 1, 3, 5-8, 10 and 19-24 and these claims are reproduced in Appendix A.

## REAL PARTY IN INTEREST

DENSO Corporation is the real party in interest, being the Assignee of the present application. The Assignment is recorded on Reel 8856 at Frame 0230.

## RELATED APPEALS AND INTERFERENCES

To the best of Applicant's knowledge, no other appeals or interferences are pending, which will directly affect, be directly affected by or have a bearing on the Board's decision in the present pending application.

## STATUS OF THE CLAIMS

Claims 1-8, 10 and 19-24 are pending in this application. Claims 1, 3, 5-8, 10 and 19-24 stand finally rejected. Claim 2 is withdrawn from consideration at this time. Claims 9 and 11-18 were cancelled. Claim 4 was objected to as being dependent upon a

rejected base claim, but it would be allowable if rewritten in independent form to include the limitations of the base claim and any intervening claim.

## STATUS OF THE AMENDMENTS

Applicant has not filed an Amendment in response to the Final Rejection by the Examiner mailed September 30, 2003. Applicant has filed a Response to the final rejection mailed September 30, 2003. In Applicant's response, Applicant responded to the Examiner's various questions presented by the Examiner and requested reinstatement of the appeal.

## SUMMARY OF THE INVENTION

Referring primarily to Figures 1 and 3, Claim 1 defines an air conditioning apparatus (1) for a vehicle which includes a passenger compartment. The air conditioning case (2) has an inside air suction port (26) and an outside air suction port (29) located at one end of the case. The other end of the air conditioning case (2) has at least a first air opening (15) for blowing air toward a lower portion of the passenger compartment and a second air opening (16) for blowing air toward a windshield. A partition member (12) divides the air conditioning case into a first air passage (13) and a second air passage (14). The first air passage (13) extends from the inside air suction port (26) to the first air opening (15) which blows air toward a lower portion of the passenger compartment. The second air passage (14) extends from the outside air suction port (29) to the second air opening (16) which blows air toward the windshield. A

blower (6) blows air through the first and second passages from one side of the case to the other.

A cooling heat exchanger (7) is located within the first and second air passages (13, 14) to cool air passing therethrough. A heating heat exchanger (8) is also located within the first and second air passages (13, 14) downstream from the cooling heat exchanger (7) to heat air passing therethrough. A temperature sensor (39) is located at a side of one of the first and second air passages to detect a cooling temperature of the cooling heat exchanger (7). Adjusting means adjusts the refrigerant flow into the cooling heat exchanger (7). Adjusting control means compares the cooling temperature detected by the temperature sensor (39) to a set temperature for controlling the operation of the adjusting means which controls the refrigerant flow into the cooling heat exchanger (7). Finally, the air conditioning apparatus comprises changing means for changing the set temperature (the temperature which is compared with the reading received from the temperature sensor (39)) according to the temperature of outside air. Thus, the refrigerant flow to the cooling heat exchanger is controlled based upon the outside air temperature.

Referring primarily to Figures 1 and 3, Claim 10 defines an air conditioning apparatus (1) for a vehicle which includes a passenger compartment. The air conditioning case (2) has an inside air suction port (26) and an outside air suction port (29) located at one end of the case. The other end of the air conditioning case (2) has at least a first air opening (15) for blowing air toward a lower portion of the passenger compartment and a second air opening (16) for blowing air toward a windshield. A partition member (12) divides the air conditioning case into a first air passage (13) and a

second air passage (14). The first air passage (13) extends from the inside air suction port (26) to the first air opening (15) which blows air toward a lower portion of the passenger compartment. The second air passage (14) extends from the outside air suction port (29) to the second air opening (16) which blows air toward the windshield. A blower (6) blows air through the first and second passages from one side of the case to the other.

A cooling heat exchanger (7) is located within the first and second air passages (13, 14) to cool air passing therethrough. A heating heat exchanger (8) is also located within the first and second air passages (13, 14) downstream from the cooling heat exchanger (7) to heat air passing therethrough. A temperature sensor (39) is located at a side of the second air passages to detect a cooling temperature of the cooling heat exchanger (7). Adjusting means adjusts the refrigerant flow into the cooling heat exchanger (7). Adjusting control means compares the cooling temperature detected by the temperature sensor (39) to a set temperature for controlling the operation of the adjusting means which controls the refrigerant flow into the cooling heat exchanger (7). A copy of the entire application is reproduced in Appendix B.

## ISSUES

Appellants present the following issue for review:

1) Whether or not Claims 1, 3-8, 10 and 19-24 are rejected under 35 USC §102(f) because the Appellant did not invent the claimed subject matter.

2) Whether or not Claims 1, 5, 7, 8, 10, 20 and 21 are rejected under 35 USC §103(a) as being unpatentable over Iritani, et al. (U.S. Pat. No. 5,526,650) in view of JP 6-40249.

3) Whether or not Claims 3 and 22 are rejected under USC §103(a) as being unpatentable over the prior art as applied to Claims 1 and 10 above, and further in view of JP 6-270645 or JP 7-69045.

4) Whether or not Claims 6, 19, 23 and 24 are rejected under 35 USC §103(a) as being unpatentable over the prior art as applied to Claims 1 and 10 above, and further in view of JP 5-124426.

A copy of each of these references is provided in Appendix C.

## GROUPING OF THE CLAIMS

Claims 1, 3-8 and 19 stand or fall together.

Claims 10 and 20-24 stand or fall together.

## ARGUMENT

The present invention in Claim 1 relates to an automobile air conditioning apparatus which utilizes a dual flow mode design. Air from inside the passenger compartment (inside air) is drawn from inside the passenger compartment by a blower and blown out into a lower portion of the passenger compartment (towards the passenger's feet). Air from outside the passenger compartment (outside air) is drawn from outside the passenger compartment by the blower and blown out towards the inside of the windshield inside the passenger compartment. The inside air and the outside air

travel through separate passages. This is known as a "double layer" air conditioning apparatus. A cooling heat exchanger cools both the inside air and the outside air as it travels through the air conditioning case. A heating heat exchanger heats both the inside air and the outside air as it travels through the air conditioning case downstream from the cooling heat exchanger. The amount of refrigerant that is supplied to the cooling heat exchanger is controlled so that a specified air temperature is reached after the air has passed through the cooling heat exchanger. The temperature of the air which has passed through the cooling heat exchanger is monitored by a temperature sensor. In Claim 1, the temperature sensor is located in one of the inside and outside air passages. The specified target air temperature for this temperature sensor which controls the refrigerant flow to the cooling heat exchanger is constantly changed with the change being based upon the temperature of air outside the passenger compartment (i.e., changing means for changing the set temperature according to a temperature of outside air).

The present invention in Claim 10 relates to an automobile air conditioning apparatus which utilizes a dual flow mode design. Air from inside the passenger compartment (inside air) is drawn from inside the passenger compartment by a blower and blown out into a lower portion of the passenger compartment (towards the passenger's feet). Air from outside the passenger compartment (outside air) is drawn from outside the passenger compartment by the blower and blown out towards the inside of the windshield inside the passenger compartment. The inside air and the outside air travel through separate passages. This is known as a "double layer" air conditioning apparatus. A cooling heat exchanger cools both the inside air and the outside air as it

travels through the air conditioning case. A heating heat exchanger heats both the inside air and the outside air as it travels through the air conditioning case downstream from the cooling heat exchanger. The amount of refrigerant that is supplied to the cooling heat exchanger is controlled so that a specified air temperature is reached after the air has passed through the cooling heat exchanger. The temperature of the air which has passed through the cooling heat exchanger is monitored by a temperature sensor. In Claim 10, the temperature sensor is located in the second air passage which is the outside air passage.

## 35 USC §102(f) REJECTION

The Examiner states that the inventors of this invention were Messrs, Suwa, Kamimura and Yomo and not the current inventive entity of Messers, Suwa, Uemura and Shikata. The Examiner has based this rejection on the inventors listed on an English translation of an abstract of the priority applications for this application. The inventorship for the English abstract was translated by electronic scanning of the priority applications and the electronic scanning machines make mistakes when attempting to translate the numerous Kan-Ji characters of the Japanese language.

The inventorship of the four priority documents (JP-08-157721; JP-08-273715; JP-08-340182; and JP-08-340107) and the present application are the same. They all have Messrs, Suwa, Uemura and Shikata as inventors. The machine translation of these three inventors became Messrs, Suwa, Kamimura and Yomo because the scanning device was unable to accurately translate the Japanese Kan-Ji characters.

Enclosed in Appendix D is a certified translation of the Japanese Application forms which shows that the actual inventorship of the priority documents are the same as the present application.

## 35 USC §103 REJECTIONS

**US 5,526,650 – Iritani, et al.**

Iritani, et al. discloses a double layer air conditioner which includes an evaporator outlet temperature sensor 80. Iritani, et al. is silent as to the exact location of sensor 80. Iritani, et al. only states in column 7, lines 36-38 that evaporator exit temperature that detects the air temperature immediately after passing through evaporator 31 (Te) is read by ECU 68. Thus, there is no disclosure with regards to the exact location of sensor 80. Based upon the reading detected by sensor 80, feedback control for the revolving speed of compressor 56 is made. As stated in column 10, lines 5-8, in the evaporation mode, execution advances to step 230, where the evaporator target exit temperature is calculated so as to satisfy for example the intake air temperature $T_{in}$ (15 °C and also 3 °C or over).

Regarding Claim 1, the last paragraph of Claim 1 states "changing means for changing the set temperature according to a temperature of outside air." The Examiner takes the position that column 10, lines 5-8 inherently meets this limitation. Applicants respectfully disagree with this interpretation of Iritani, et al. As stated in column 10, lines 5-13, in the dehumidification mode, the evaporator target exit temperature $T_{eo}$ is calculated and the speed of the compressor 56 is controlled to have the exit temperature meet the target temperature. What is defined here is how the set

temperature is calculated and not how it is adjusted based on the outside air temperature. Thus, while the outside temperature may or may not have an effect on the set temperature calculated in Iritani, et al. (depending on the position of door 25), there is nothing disclosed, taught or suggested in Iritani, et al. to provide changing means for changing the set temperature according to the outside temperature.

Regarding Claim 10, Claim 10 specifically defines the temperature sensor as being located in the second air passage. Because Iritani, et al. is silent with regards to the location of its temperature sensor, Iritani, et al. does not disclose teach or even suggest the specific location of the temperature sensor defined in Claim 10.

**JP 61-202914**

While the Examiner on page 5 listed Iritani, et al. in view of JP 6-40249, the discussion on page 7 refers to JP 61-202914. Applicants' argument will be based upon JP 61-202914 which, if incorrect, will be addressed in Applicants' Reply Brief.

The Examiner has taken the position that because JP 61-202914 discloses a temperature sensor in the bottom duct, that it would be obvious to one of ordinary skill in the art to locate the temperature sensor of the present invention in the bottom duct because of easy access from under the dashboard.

Regarding Claim 1, JP 61-202914 does not cure the lack of disclosure or suggestion in Iritani, et al. to provide changing means to change the set temperature according to the outside temperature. In Claim 1, the temperature sensor is disposed in at least one of the first and second passages. As clearly disclosed in Figure 1 of the present invention, the first and second passages are located fore and aft in the vehicle

and thus the argument by the Examiner that it would be obvious to locate the sensor in the bottom of the air conditioning case has absolutely nothing to do with the location of the temperature sensor in the present invention since both the first and second air passages form a bottom of the air conditioning case which can be reached under the dashboard. The Examiner has apparently compared Figure 1 of JP 61-202914 and a portion of Figure 1 of the present invention without fully appreciating the entire disclosure illustrated in Figure 1 of the present invention.

Regarding Claim 10, Claim 10 defines the temperature sensor as being located in the second air passage. As detailed above, the Examiner has incorrectly interpreted the second air passage (14) of the present invention as the bottom air passage. In fact, the first and second air passages are next to each other in a fore and aft direction and neither of them are located below the other. The Examiner has simply taken advantage of the similarity in the two drawings (the two Figure 1s) without taking the time to fully understand the drawing of the present invention.

In addition, the present invention describes the first air passage as extending from the inside-air suction port to the first air opening which blows air toward a lower portion of the passenger compartment. The present invention further defines the second air passage as extending from the outside air-suction port to the second opening which blows air onto the windshield. Thus, the specific location of sensor 39 positions sensor 39 between the outside-air suction port and the air blown onto the windshield. JP 61-202914 does not differentiate passages P1 and P2 with respect to the suction port nor does it disclose locating the temperature in the duct which blows air onto a windshield or even into the upper portion of the passenger compartment.

In JP 61-202914, interior/exterior door 1 controls the inside/outside air and this air mixture is provided to both passages P1 and P2. Temperature sensor 6 is located in the duct that blows air to the lower portion of the cabinet. On page 10 of the translation, it states that the blow-off temperature of the lower part of the cabin is controlled by damper 8 which is located in P2. Thus, JP 61-202914 does not disclose, teach or even suggest the specific location of the temperature sensor which is located in the duct which blows air to the windshield as defined by Claim 10 of the present invention.

In a recent decision of the C.A.F.C., Panduit Corp. v. Dennison Manufacturing Co., 810 F. 2d 1561, 1 U.S.P.Q. 2d 1593 (Fed. Cir. 1987), Chief Judge Markey discussed and applied the various judicial pronouncements in reversing a lower court's holding of invalidity based on obviousness under Section 103, and further cautioned against the impermissible use of hindsight in picking and choosing isolated elements from various pieces of prior art, which bear little or no relationship to each other or to the problems addressed by the Applicants' invention, in reconstructing the claimed invention from the Applicants' own disclosure.

In the Panduit decision, Chief Judge Markey offered the opinion that such impermissible hindsight reconstruction from isolated elements in a number of prior art references in order to arrive at the claimed combination is contrary to the purpose of the patent laws.

> "Virtually all inventions are necessarily combinations of old elements. The notion, therefore, that combination claims can be declared invalid merely upon finding similar elements in separate prior patents would necessarily destroy virtually all patents and cannot be the law under the statute, Section 103." 810 F. 2d at 1575, 1 U.S.P.Q. 2d at 1603.

Furthermore, Judge Markey severely criticized the lower court for failing to view the claimed combination invention as a whole, but rather selecting bits and pieces from prior patents that might be modified to fit the lower court's interpretation of the claims.

In the present application, the cited references do not disclose, teach or even suggest Applicants invention in Claims 1 or 10 whether taken alone or taken together. In fact, the JP 61-202914 reference has no relationship whatsoever to the present invention other than, when taken out of context, the two Figures 1 look similar.

Regarding Claims 3, 6-8 and 19, these claims stand or fall with Claim 1. Regarding Claims 20-24, these claims stand or fall with Claim 10. The additional prior art cited by the Examiner for dependent Claims 3, 6, 19 and 22-24 do not provide disclosure which would overcome the deficiencies described above for Iritani, et al. and/or JP 61-202914.

## CONCLUSION

Applicants respectfully submit that the Examiner has not proved that his combination of references presents a prima facie case of obviousness as the references cited by the Examiner do not disclose, teach or suggest the elements of the claimed invention, much less suggest the combination of the references.

Applicants' invention provides the art with a unique air conditioning system which adjust the target set temperature based on the outside temperature (Claim 1) and specifically locates the temperature sensor in the outside air passage (Claim 10) to provide an air conditioning system which reduces and/or eliminates frosting of the

evaporator. Accordingly, reversal of the Final Rejections for Claims 1, 3-8, 10 and 19-24 is respectfully requested.

Respectfully submitted,

Dated: December 15, 2003

By: _____
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